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DOCUMENT (1)

- 1 -

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(54) [Title of the Invention] COMPOSITE COPYING MACHINE

(57) [Abstract]

[Object] To easily make the content of a document to be distributed known to many people.

[Construction] When distributing, for example, a document, from a composite copying machine 1 connected to a plurality of terminal devices 3a through 3n by a LAN 2, a distribution-destination selector 13 selects designated distribution destinations from a connecting-destination storage unit 11 and temporarily stores them, together with a document name, in a distribution-destination storage unit 12. The read document data is stored in a data storage unit 10. A distribution-destination reporting unit 14 reads the designated destinations to which the document is to be distributed from the distribution-destination storage unit 12, and sends them to a LAN controller 6, and the LAN controller 6 informs the designated distribution

destinations that there is a document to be distributed. In response to a request to distribute the document from a terminal device, the stored document data is sent to the terminal device.

[Claims]

[Claim 1] A composite copying machine having a LAN function and a facsimile function and connected to a plurality of terminal devices by a LAN, comprising an operation display unit, a connecting-destination storage unit, a distribution-destination storage unit, a distribution-destination selector, a data storage unit, a distribution-destination reporting unit, and a distributed-document output unit, wherein:

the operation display unit includes operation designation means for designating regular copying or distribution of a read document, and distribution-destination designation means for designating the name of a document to be distributed and terminal devices to which the document is to be distributed;

the connecting-destination storage unit stores the identification number of each of the terminal devices connected by the LAN, and the distribution-destination storage unit temporarily stores the name of the document to be distributed and the identification numbers of the terminal device to which the document is to be distributed;

when the distribution of a document is designated by the operation display unit, the distribution-destination selector selects the designated terminal devices to which the document is to be distributed from the connecting-

destination storage unit and stores the designated terminal devices, together with the name of the document, in the distribution-destination storage unit;

when the distribution of the document is designated, the data storage unit temporarily stores the data of the read document;

when the distribution of the document is designated and the document is read, the distribution-destination reporting unit reads the destinations to which the document is to be distributed from the distribution-destination storage unit, and sends the destinations to a LAN controller, and the LAN controller informs the distribution-destination terminal devices of the name of the document and a message indicating that there is a document to be distributed; and

in response to a request to distribute the document from a terminal device, the distributed-document output unit reads the data of the document from the data storage unit and sends the data to the LAN controller 5.

[Claim 2] The composite copying machine according to claim 1, wherein the distribution-destination selector specifies the destination terminal devices from data of a fixed-format distribution destination list of the read document.

[Claim 3] The composite copying machine according to claim 1 or 2, wherein, in response to a request to distribute the document from a terminal device, the distributed-document

output unit reads the data of the document stored in the data storage unit and sends the data to the terminal device that has requested to distribute the document.

[Claim 4] The composite copying machine according to claim 3, wherein, in response to a request that there is no need to copy the document from a terminal device, the terminal device is deleted from the distribution-destination storage unit.

[Claim 5] The composite copying machine according to claim 1 or 2, wherein, when the designated distribution destination is not stored in the connecting-destination storage unit, the distribution-destination selector sends the distribution destination to a facsimile controller, and the facsimile controller sends the data of the document to the designated distribution destination.

[Detailed Description of the Invention]

[0001]

[Industrial Field of the Invention] The present invention relates to a composite copying machine having a LAN function and a facsimile function and connected to a plurality of terminal devices by a LAN. More particularly, the invention relates to facilitating of document distribution.

[0002]

[Description of the Related Art] In offices, generally, documents on which various items of information are

indicated, for example, reports and transactions, are distributed or circulated to and between many people. In this case, the same document is copied and the copies of the document are distributed or circulated.

[0003]

[Problems to be Solved by the Invention] When distributing a document, as described above, the same document is copied, and it is not necessary that the distributed copies of the document be kept by individuals, and the copies are frequently disposed of after checking the content of the document. As the number of sheets of paper to be disposed of increases, more recording paper is uselessly wasted.

[0004] A person in charge has to visit many people to distribute a document, and it takes much time to perform a distribution work, thereby wasting time.

[0005] The present invention has been made to solve the above-described problems. It is an object of the present invention to obtain a composite copying machine that can make the content of a document to be distributed known to many people without the need to copy the document.

[0006]

[Means for Solving the Problems] A composite copying machine according to the present invention has a LAN function and a facsimile function and is connected to a plurality of terminal devices by a LAN. The composite

copying machine includes an operation display unit, a connecting-destination storage unit, a distribution-destination storage unit, a distribution-destination selector, a data storage unit, a distribution-destination reporting unit, and a distributed-document output unit. The operation display unit includes operation designation means for designating regular copying or distribution of a read document and distribution-destination designation means for designating the name of a document to be distributed and terminal devices to which the document is to be distributed. The connecting-destination storage unit stores the identification number of each of the terminal devices connected by the LAN, and the distribution-destination storage unit temporarily stores the name of the document to be distributed and the identification numbers of the terminal device to which the document is to be distributed. When the distribution of a document is designated by the operation display unit, the distribution-destination selector selects the designated terminal devices to which the document is to be distributed from the connecting-destination storage unit and stores the designated terminal devices, together with the name of the document, in the distribution-destination storage unit. When the distribution of the document is designated, the data storage unit temporarily stores the data of the read document. When

the distribution of the document is designated and the document is read, the distribution-destination reporting unit reads the destinations to which the document is to be distributed from the distribution-destination storage unit, and sends the destinations to a LAN controller, and the LAN controller informs the distribution-destination terminal devices of the name of the document and a message indicating that there is a document to be distributed. In response to a request to distribute the document from a terminal device, the distributed-document output unit reads the data of the document from the data storage unit and sends the data to the LAN controller 5.

[0007] The above-described distribution-destination selector may specify the destination terminal devices from data of a fixed-format distribution destination list of the read document.

[0008] In response to a request to distribute the document from a terminal device, the distributed-document output unit may read the data of the document stored in the data storage unit and send the data to the terminal device that has requested to distribute the document.

[0009] In response to a request that there is no need to copy the document from a terminal device, the terminal device may be deleted from the distribution-destination storage unit.

[0010] When the designated distribution destination is not stored in the connecting-destination storage unit, the distribution-destination selector may send the distribution destination to a facsimile controller, and the facsimile controller may send the data of the document to the designated distribution destination.

[0011]

[Operation] In the present invention, in the connecting-destination storage unit of the composite copying machine connected to a plurality of terminal devices by a LAN, the terminal devices connected by the LAN are prestored. When distributing a document to each terminal device, the operation designation means provided for the operation display unit of the composite copying machine selects the distribution of a document, and the operation function of the composite copying machine is switched to document distribution processing. Thereafter, the name of a document to be distributed and terminal devices to which the document is to be distributed are designated and input by using the distribution-destination designation means of the operation display unit. The distribution-destination selector sequentially selects the designated distribution-destination terminal devices from the connecting-destination storage unit and temporarily stores the terminal devices, together with the name of the document, in the distribution-

destination storage unit. The data of the document read during the document distribution processing is temporarily stored in the data storage unit. After finishing reading the document, the distribution-destination reporting unit reads the designated destinations to which the document is to be distributed from the distribution-destination storage unit, and sends them to the LAN controller. The LAN controller informs the designated destination terminal devices of the document name and a message indicating that there is a document to be distributed.

[0012] By designating distribution-destination terminal devices from the data of a fixed-format distribution destination list of the read document, the distribution-destination selector can automatically specify destinations to which the document is to be distributed.

[0013] In response to a request to distribute the document from a terminal device that has received a message that there is a document to be distributed, the data of the document stored in the data storage unit is sent to the terminal device. Accordingly, only data required for the terminal device can be sent.

[0014] In response to a request that there is no need to copy the document from a terminal device, that terminal device is deleted from the distribution-destination storage unit. Thus, the number of copies recorded on recording

paper can be reduced.

[0015] When a designated distribution destination is not a terminal device connected to the LAN, the distribution-destination selector distributes the document to the distribution destination by facsimile communication.

[0016]

[Embodiments] Fig. 1 is a block diagram illustrating the configuration of an embodiment of the present invention. As shown in the drawing, a composite copying machine 1 has a LAN function and a facsimile function, and is connected to a plurality of terminal devices 3a through 3n, such as a workstation or personal computers in an office, by a LAN 2. The composite copying machine 1 includes a system controller 4 that manages the overall copying machine and that selects various operation functions and perform processing corresponding to the selected operations, a LAN controller 5 that performs communication with the terminal devices 3a through 3n connected to the LAN 2, a facsimile communication controller 6 connected to a communication line, a reader 7 that reads a document to be copied or distributed, a printer 8 that prints a read document onto recording paper, an operation display unit 9, a data storage unit 10 that temporarily stores data of a read document, a connecting-destination storage unit 11, a distribution-destination storage unit 12, a distribution-destination selector 13, a

distribution-destination reporting unit 14, and a distributed-document output unit 15.

[0017] The operation display unit 9 includes, not only various operation keys and a display portion for displaying, for example, various items of control information, but also, as shown in Fig. 2, an operation designation key 91 for designating regular copying or document distribution, distribution-destination designation means 92, which is formed of, for example, a keyboard or a touch panel, for designating the name of a document to be distributed and terminal devices to which the document is distributed, and a distributed-document output key 93 for giving an instruction to print out the distributed document. The ID numbers of the terminal devices 3a through 3n connected by the LAN 2 are prestored in the connecting-destination storage unit 11. The distribution-destination storage unit 12 includes, as shown in Fig. 3, a storage table 121 for storing document names and destinations, and temporarily stores the name of a document to be distributed and the ID numbers of the terminal devices to which the documents are to be distributed. When the document distribution is designated by the operation designation key 91, and when the document distribution operation function is selected by the system controller 4, and when the document name and the destinations are designated by the distribution-destination

designation means 92, the distribution-destination selector 13 selects the designated terminal devices among the terminal devices 3a through 3n stored in the connecting-destination storage unit 11, and stores the selected terminal devices, together with the name of the document to be distributed, in the distribution-destination storage unit 12. When the document distribution is designated and the document to be distributed is read, the distribution-destination reporting unit 14 reads the name of the document and the destinations from the distribution-destination storage unit 12, and sends them to the LAN controller 5. In response to a request from the terminal devices 3a through 3n, the distributed-document output unit 15 reads the document data from the data storage unit 10 and sends it to the LAN controller 5.

[0018] The operation for distributing, for example, a document in the above-configured composite copying machine 1 is described below with reference to the flowchart of Fig. 4.

[0019] When the operation designation key 91 of the operation display unit 9 is operated to select the document distribution, the system controller 4 selects the document distribution operation function and instructs the distribution-destination selector 12 and the distribution-destination reporting unit 14 to perform certain processing (step S1). When, in this state, the name of a document and

distribution destinations are designated by the distribution-destination designation means 92 of the operation display unit 9 (step S2), the distribution-destination selector 13 stores the designated document name in the storage table 121 of the distribution-destination storage unit 12, sequentially selects the ID numbers of the designated terminal devices from the terminal devices 3a through 3n stored in the connecting-destination storage unit 11 and sends them to the distribution-destination storage unit 12. The distribution-destination storage unit 12 stores therein the ID numbers together with the document name (step S3). When the start key is operated after the name of the document to be distributed and the destinations are designated by the operation display unit 4, the reader 7 starts reading the set document and sequentially stores the data of the read document in the data storage unit 10 (step S4). When the document distribution operation function is selected, the data of the document stored in the data storage unit 10 remains stored rather than being printed out from the printer 8. When the reading of the document is finished (step S5), the distribution-destination reporting unit 14 searches the storage table 121 of the distribution-destination storage unit 12 from the designated document name, and sequentially reads the ID numbers of the distribution-destination terminals to send the ID numbers,

together with the document name, to the LAN controller 5. The LAN controller 5 sends, together with the document name, a message indicating that there is a document to be distributed to the terminal devices of the received ID numbers (step S6). As discussed above, when distributing a document, the document name and a message indicating that there is a document to be distributed can be speedily provided to required terminal devices.

[0020] When there is a request to output the document from terminal devices that have received the above-described message and the document name (step S7), the LAN controller 5 sends the name of the requested document and the ID numbers of the terminal devices to the distributed-document output unit 15. The distributed-document output unit 15 verifies the received ID numbers of the terminal devices against the ID numbers of the terminal devices stored in the distribution-destination storage unit 12 from the received document name. After checking that the terminal devices that have sent a request are destinations to which the document is to be distributed, the distributed-document output unit 15 reads the data of the document stored in the data storage unit 10 and sends it to the LAN controller 5. The LAN controller 5 sends the received document data to the terminal devices that has requested to output the document (step S8). Accordingly, the terminal devices 3a through 3n

can directly check the content of a required document on the screens of the terminal devices 3a through 3n. Thus, the terminal devices 3a through 3n can print out only documents that need to be kept.

[0021] If printing is performed in the composite copying machine 1, upon receiving from a terminal device a message that there is no need to print a document on recording paper or store it, the distribution-destination selector 13 deletes the ID number of that terminal device stored in the distribution-destination storage unit 12. When there is a request from another terminal device to print the document on recording paper for the terminal device to keep it, or when the distributed-document output key 93 of the operation display unit 9 is operated, a required number of copies of the document data stored in the data storage unit 10 are printed out from the printer 9. In this manner, only a required number of copies are printed out, thereby eliminating the wasteful printing operations. Additionally, the wasteful use of recording paper can be prevented, and the number of documents to be disposed of can also be reduced.

[0022] If the operation designation key 91 of the operation display unit 9 is operated to select the document copying, the regular copying operation is started (step S9).

[0023] In the above-described embodiment, the name of a

document to be distributed and distribution destinations are input by the distribution-destination designation means 92 of the operation display unit 9. The name of a document to be distributed and distribution destinations may be automatically specified for the distribution-destination selector 13 from the fixed-format distribution-destination list data disposed at the end of the document read by the reader 7.

[0024] In the above-described embodiment, the content of a document is sent after informing the terminal devices 3a through 3n connected to the LAN 2 that there is a document to be distributed. When the name of a document to be distributed and destinations are designated and when the distribution-destination selector 13 searches for the distribution destinations and identifies that some distribution destinations are not connected to the LAN 2, the distribution-destination selector 13 sends those distribution destinations to the facsimile controller 6 so that the document data can be sent by facsimile communication. In this manner, a copy of, for example, a document, can be sent to destinations which are not connected to the LAN 2.

[0025]

[Advantages] As is seen from the foregoing description, the present invention offers the following advantages. When

distributing a document to a plurality of terminal devices connected to a LAN, the name of the document and a message indicating that there is a document to be distributed are sent to the designated terminal devices. Accordingly, a message that there is a document to be distributed can be speedily reported without the need for a person in charge to contact each distribution destination.

[0026] In response to a request to distribute the document from terminal devices that have received the above-described message, the document data is sent to the terminal devices. This enables the terminal devices to directly check on the screens the content of the required document. As a result, the time for distributing documents can be considerably reduced, and only required data can be obtained.

[0027] When printing a document to keep it, only a required number of copies can be printed out, thereby preventing the wasteful use of recording paper and also reducing the number of documents to be disposed of.

[0028] By designating distribution terminal devices by using fixed-format distribution list data of a read document, the name of the document to be distributed and distribution destinations can be automatically specified, thereby facilitating the distribution of copies of, for example, the document.

[0029] When a designated distribution destination is not

connected to a LAN, a document can be distributed to that distribution destination by facsimile communication. Accordingly, a document can be distributed to places other than the terminal devices connected to the LAN without the need for a person in charge to visit the places.

[Brief Description of the Drawings]

[Fig. 1] Fig. 1 is a block diagram illustrating the configuration of an embodiment of the present invention.

[Fig. 2] Fig. 2 is a schematic diagram illustrating part of an operation display unit of the embodiment.

[Fig. 3] Fig. 3 illustrates the configuration of a distribution-destination storage unit of the embodiment.

[Fig. 4] Fig. 4 is a flowchart illustrating the operation of the embodiment.

[Reference Numerals]

- 1 composite copying machine
- 2 LAN
- 3a - 3n terminal devices
- 4 system controller
- 5 LAN controller
- 6 facsimile communication controller
- 9 operation display unit
- 10 data storage unit
- 11 connecting-distribution storage unit
- 12 distribution-destination storage unit

- 13 distribution-destination selector
- 14 distribution-destination reporting unit
- 15 distributed-document output unit
- 91 operation designation key
- 92 distribution-destination designation means

[FIG. 1]

- 1 COMPOSITE COPYING MACHINE
- 4 SYSTEM CONTROLLER
- 5 LAN CONTROLLER
- 6 FACSIMILE COMMUNICATION CONTROLLER
- 7 READER
- 8 PRINTER
- 9 OPERATION DISPLAY UNIT
- 10 DATA STORAGE UNIT
- 11 CONNECTING-DESTINATION STORAGE UNIT
- 12 DISTRIBUTION-DESTINATION STORAGE UNIT
- 13 DISTRIBUTION-DESTINATION SELECTOR
- 14 DISTRIBUTION-DESTINATION REPORTING UNIT
- 15 DISTRIBUTED-DOCUMENT OUTPUT UNIT

[FIG. 2]

91 OPERATION DESIGNATION KEY

| |
|--------------|
| COPY |
| DISTRIBUTION |

93 DISTRIBUTED-DOCUMENT OUTPUT KEY

[FIG. 3]

| |
|---|
| DOCUMENT NAME DISTRIBUTION DESTINATION |
| DISTRIBUTION DESTINATION DOCUMENT NAME DISTRIBUTION DESTINATION |
| DISTRIBUTION DESTINATION |

[FIG. 4]

START

S1 HAS DOCUMENT DISTRIBUTION BEEN SELECTED?
S2 INPUT DOCUMENT NAME AND DISTRIBUTION DESTINATIONS
S3 SELECT DISTRIBUTION DESTINATIONS
S4 READ AND STORE DOCUMENT TO BE DISTRIBUTED
S5 HAS READING BEEN FINISHED?
S6 SEND MESSAGE TO DISTRIBUTION DESTINATIONS
S7 REQUEST TO OUTPUT DOCUMENT
S8 SEND DOCUMENT
S9 PERFORM COPYING
END